ABSTRACT

Aim:

The aim of this study was to evaluate the effect of MSE-2 on the Mid-palatal and Circum-maxillary suture using Cone beam computerized tomography.

Materials and Methods:

This observational study included 5 subjects between the age group of 19-25 years who required maxillary expansion and were treated with Maxillary Skeletal Expander -2 (MSE-2). Three-dimensional evaluation of the changes before and after expansion was evaluated. The statistical analysis was performed using SPSS software. Measurements before and after suture opening were compared using Wilcoxon sig rank test.

Results:

The mid-palatal suture split, and maxilla moved laterally and forward. The magnitude of mid-palatal suture was larger in axial palatal section, smaller in lower nasal section and smallest in upper nasal section. The amount of split at PNS was 75% of that at ANS, showing that the opening was nearly parallel. In the coronal plane, Upper interzygomatic distance increased by 0.3 mm, Lower interzygomatic distance increased by 4.1mm.Frontozygomatic angles increased by 1.7° and 2.8° (right and left sides),maxillary inclination increased by 1.6° and 1.9° (right and left sides) and intermolar distance

increased by 6.26 mm. The zygomaticomaxillary complex rotated outwards with a center of rotation located in proximity of the frontozygomatic suture.

Conclusions:

A significant lateral displacement of maxillary and zygomatic bones occurred and rotated along the common center of rotation which was located near the superior aspect of the frontozygomatic suture in patients treated with MSE-2**.**

Keyword: ***Maxillary Skeletal Expander-2, Skeletal changes, Midpalatal Suture, Circum-maxillary Suture, Cone-beam computed tomography.***